

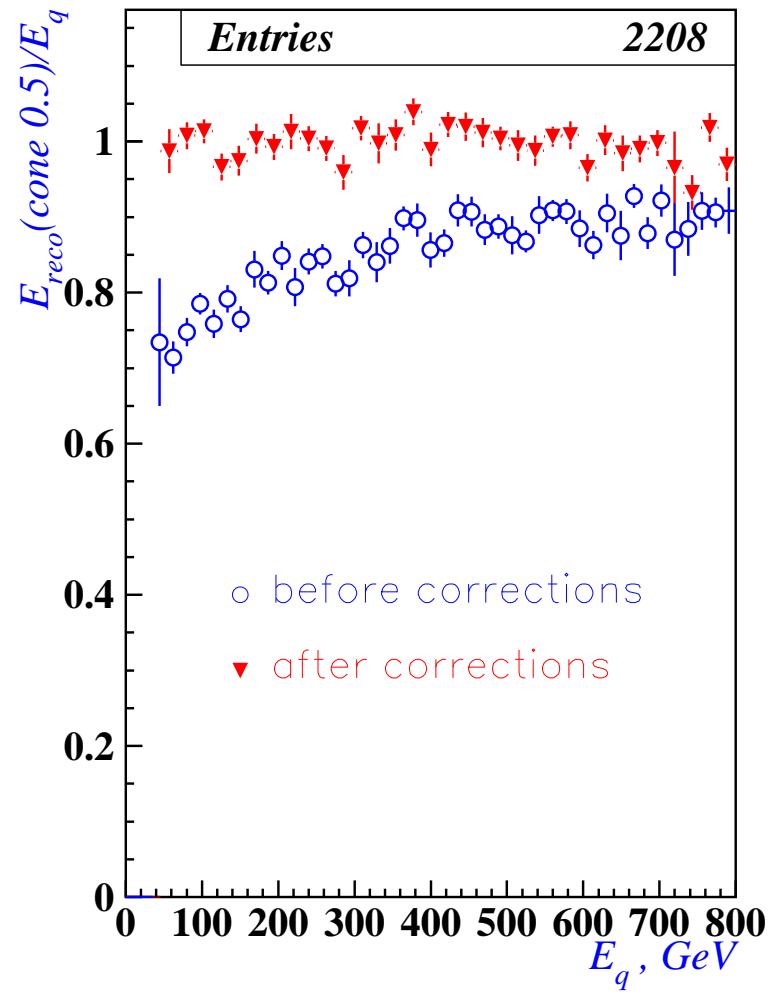
Higgs mass reconstruction in
 $qq \rightarrow qqH, H \rightarrow \tau\tau$
with quark energy corrections.

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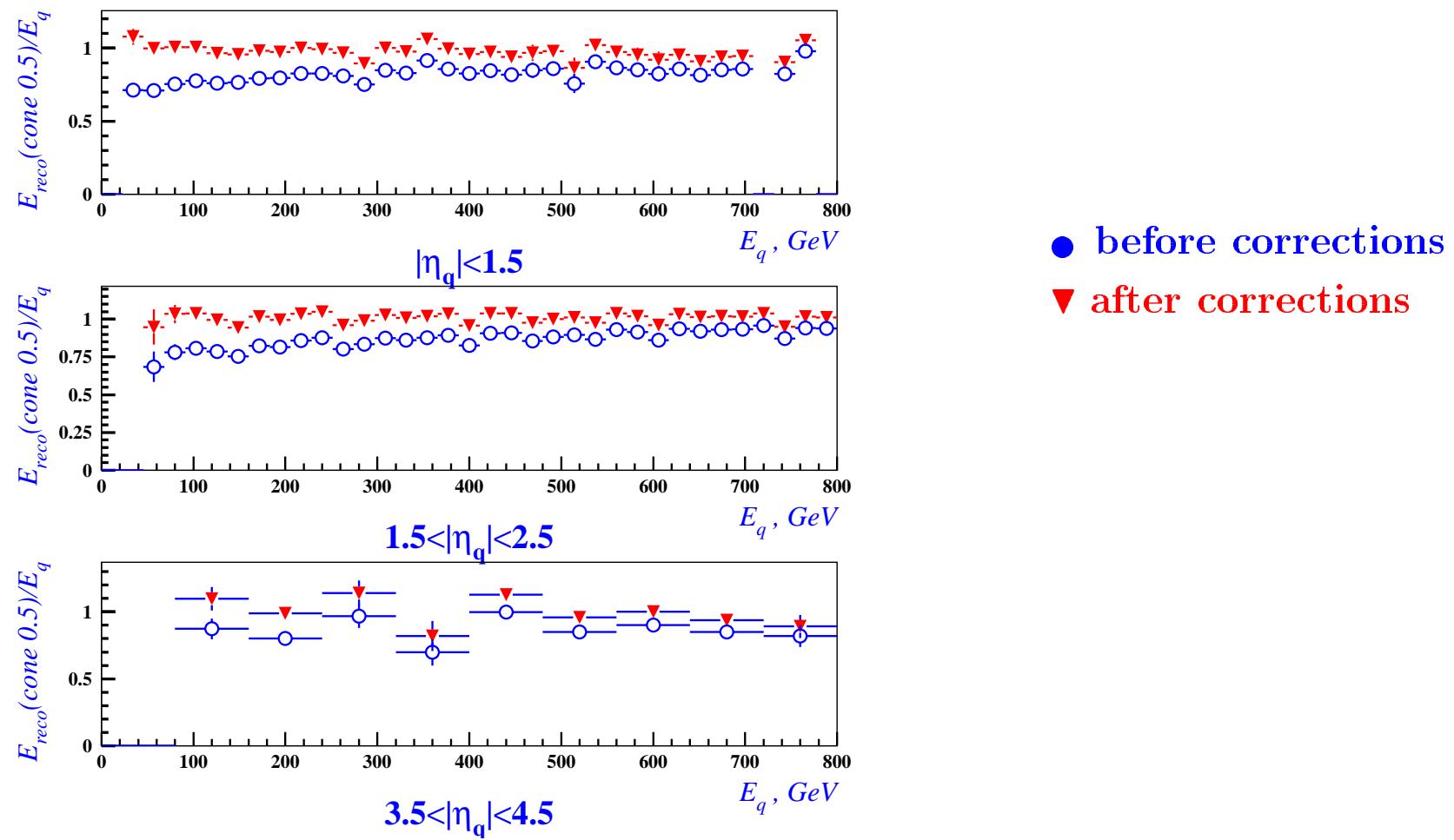
The task was to improve the Higgs mass resolution and reconstruction efficiency in the channel $qq \rightarrow qqH$, $H \rightarrow \tau\tau \rightarrow ej$, for $M_H = 135$ GeV.

Corrections for tagging jets energy have been determined: reconstruction energy E_{reco} as a function of generated quark energy E_q was fitted using a second-order polynomial.

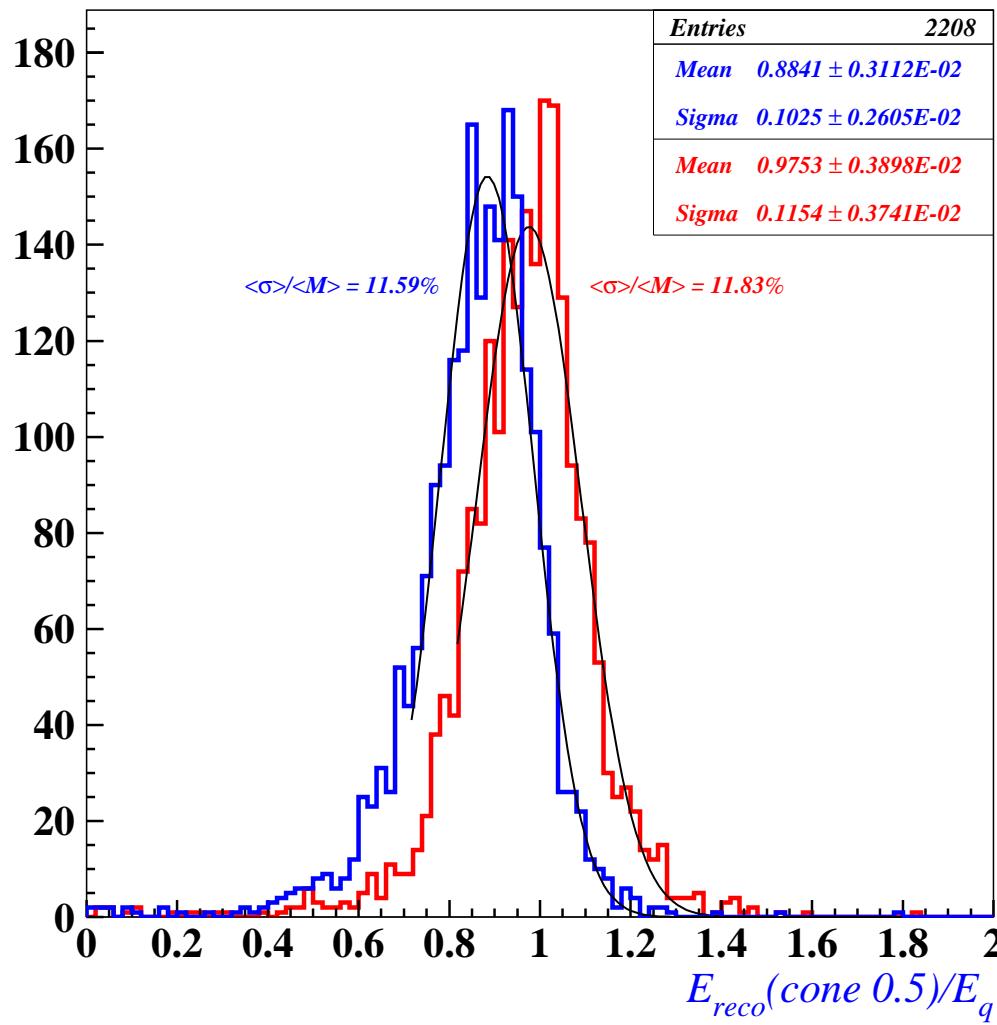
Jet energy scale before and after corrections



Jet energy scale before and after corrections *vs* jet rapidity

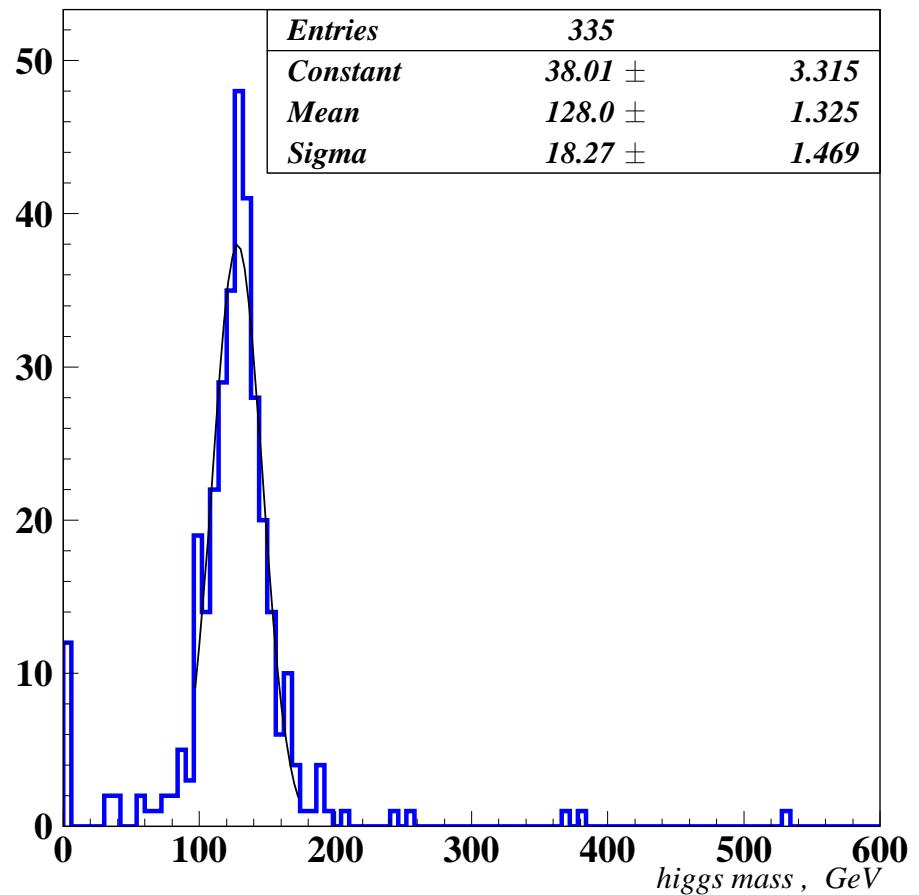


Peak position

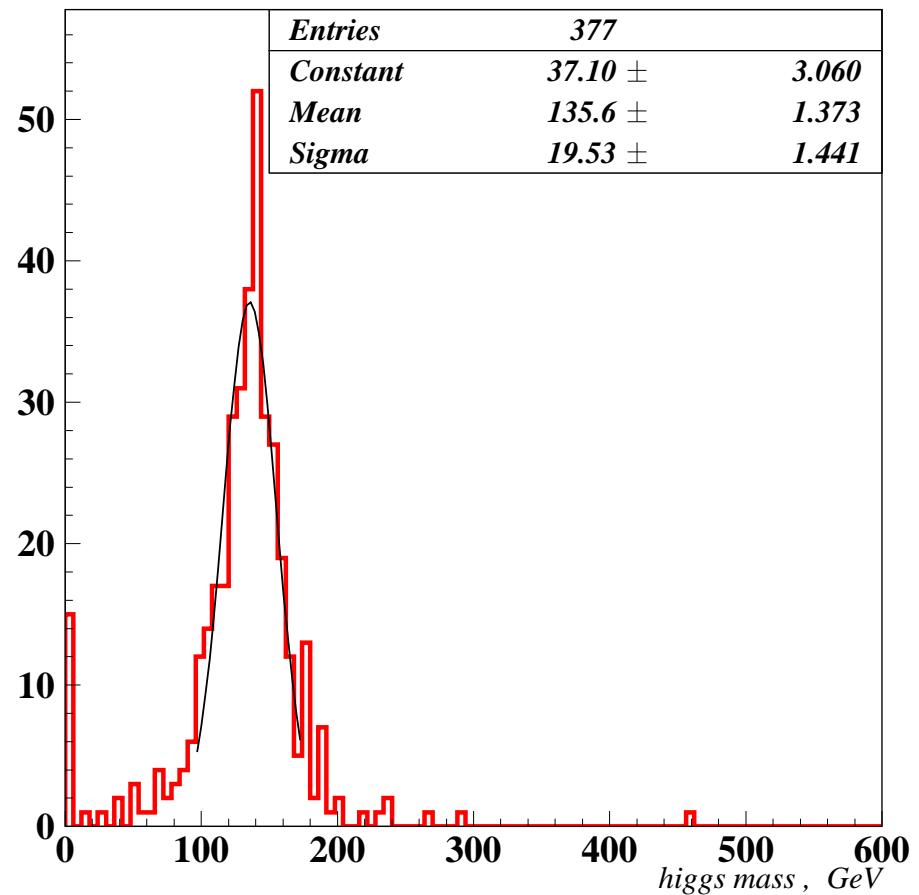


before corrections
after corrections

No corrections



Corrected MET and jets (except lepton's towers)



$E_t > 30 \text{ GeV}$, $M_{jj} > 1 \text{ TeV}$, $\Delta\eta > 4.4$

	no corrections	MET from $p_t^l, p_t^{\tau-jet}$ + non corrected tagging jets	MET from $p_t^l, p_t^{\tau-jet}$ + corrected tagging jets	corrected MET and jets * (except lepton's towers)
$< M_H >, \text{ GeV}$	128.0	122.9	126.2	135.6
$< \sigma >, \text{ GeV}$	18.27	18.86	21.98	19.53
$< \sigma > / < M_H >, \%$	14.27	15.34	17.41	14.40

* out off cone towers corrected with 30 GeV jet energy correction
 (Silvia's corrections) - CMS IN 2001/001

Conclusion

New jet energy corrections give us better Higgs mass position,
but doesn't improve the mass resolution.

The next step is to include tracks to improve mass resolution.